WHAT IS CLAIMED AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. A memory apparatus, comprising:

a movable media having a surface for placing anomalies thereon;

a moveable reading/writing mechanism, comprising,

a moveable platform,

at least one fine tip portion attached to said moveable platform configured to write (cause) anomalies and read anomalies on said media surface;

a media movement mechanism attached to said moveable media and configured to move said media in response to media control signals; and

a platform movement mechanism attached to said platform and configured to move said platform in response to platform control signals;

wherein said at least one fine tip portion comprises a read/write device configured to cause at least one of molecular aberrations, atomic aberrations, molecular orientation, atomic orientation, electron orientation, magnetic field orientation, atomic or molecular electronic charge, molecular voids, atomic voids, electronic voids, magnetic field voids,

molecular bond states, and crystalline lattice structure on at least said media surface as said anomalies.

2. The memory apparatus according to Claim 1, further comprising:

an i/o device having,

an addressing port for identifying an address corresponding to an area of said media surface where data is to be one of written and read,

an i/o port for transferring one of data to be read from and written to said media surface via said at least one fine tip portion, and

an addressing control device configured to send control signals to each of said media and platform movement mechanisms so that said at least one fine tip portion passes an area on said media surface corresponding to an address identified at said addressing port.

3. The memory apparatus according to Claim 1, wherein said writing fine tip portion comprises an electromagnetic radiation energy source.

4. The memory apparatus according to Claim 1, wherein said reading fine tip portion comprises an electromagnetic radiation sensitive receptor.

5. The memory apparatus according to Claim 1, wherein said writing fine tip portion applies a repositioning force comprising at least one of a mechanical force, chemical force, electrostatic force, electromagnetic radiation, and magnetic field to cause said anomalies.

6. The memory apparatus according to Claim 5, wherein said writing fine tip portion utilizes said repositioning force to at least one of remove and reposition of at least one of atoms, molecules, electrons, and magnetic domains at least one of above, on and below said media surface to cause said anomalies.

7. The memory apparatus according to Claim 1, wherein :

said reading fine tip is configured to detect at least one of current, voltage electromagnetic radiation, vibration parameters [phase and amplitude]

having been one of caused or affected by said anomalies.

8. The memory apparatus according to Claim 1, further comprising:

an analysis device configured to analyze at least one of,

patterns of current between said reading fine tip and said media surface,

patterns of electromagnetic radiation received from said media surface in response to a stimulus,

patterns of shifting phase of vibrations of said reading fine tip;

patterns of changing amplitude of said reading fine tip; and

patterns of at least one of current and voltage between said reading fine tip and said media surface.

9. The apparatus according to Claim 2, wherein at least one of said media movement mechanism and said platform movement mechanism comprises:

an electrostatic device constructed to move at least one of said media and said platform based on an applied electrostatic potential; and

a electrostatic control and supply device connected to said addressing control device and configured to apply an electrostatic potential to said electrostatic device to move at least one of said media and said platform to pass said area on said media surface according to the control signals sent by said addressing control device.

10. The apparatus according to Claim 9, wherein: said electrostatic device comprises:

a series of prong sets, wherein,

said prong sets are attached in series such that a first of said prong sets is attached at a first end to a fixed position of said apparatus, and a second end of said first prong set is attached to a first end of a second of said prong sets, and so on, until a last (n) of said prong sets is attached at a first end to a second end of an n-1 prong set, and a second end of said last (n) prong set is attached to one of said media and said platform,

each prong set comprises a series of at least two prongs, each prong in a set is separated from other prongs of a same set by a gap, each prong constructed of at least one conductor and connected to said

electrostatic supply source such that opposite electrostatic forces are applied to alternating of said prongs in a same set by said electrostatic supply, and

when said opposite electrostatic forces are applied to any of said prong sets, said gaps in the electrostatically charged prong set collapse an amount based on a magnitude of said opposite electrostatic forces causing said series of prong sets to collapse and move one of said media and said platform.

11. The apparatus according to Claim 10, wherein said electrostatic control and supply device is further configured to calculate an amount of electrostatic potential to apply to said electrostatic device.

12. The apparatus according to Claim 9, further comprising a calibration mechanism configured to move said media and said platform to a full extent of a range of motions and determine amounts of electrostatic force needed to move said media to plural positions in relation to said platform.

13. The apparatus according to Claim 10, wherein said electrostatic device comprises:

a fixed comb having fingers protruding in an x-axis direction,

a moving comb having fingers protruding in an x-axis direction and interleaved among said fingers of said fixed comb,

bars attached to said moving comb, said bars being rigid in a y-axis direction and flexible in an x-axis direction to allow motion of said moving comb in said x-axis direction but maintaining separation of fingers of said fixed and moving combs in said y-axis direction,

a coupling rod attached to said moving comb and one of said media and said platform, and

an electrical path connected to said fixed comb and an electrical path connected to said moving comb such that and electrical potential can be placed between said fixed and moving combs.

14. The apparatus according to Claim 13, wherein said fingers of said fixed and moving combs are notched to increase a surface area of opposing surfaces between fingers of said fixed and said moving combs.

15. The apparatus according to Claim 14, wherein said notches between said fingers of said fixed and moving combs are staggered.

16. The apparatus according to Claim 10, wherein:

at least one of said media movement mechanism and said platform movement mechanism comprises,

a comb drive, comprising,

a fixed comb having fixed fingers,

a moving comb having moving fingers interleaved between said fixed fingers,

a flex rod connected to said moving comb,

inputs connected to each of said fixed and moving combs and configured to allow application of an electrostatic force between said fixed and moving combs.

17. The apparatus according to Claim 16, wherein:

each of said fixed and moving fingers include notches; and

positions of notches on said fixed fingers are staggered with positions of said notches on said moving fingers.

18. The apparatus according to Claim 10, wherein:

said electrostatic device comprises:

a spring actuator assembly, comprising,

at least two conductive materials layered between an insulator, and

electrical paths connecting potentials from said electrostatic device to said conductive materials,

wherein said spring actuator moves in an x-direction when electrostatic forces are applied to said conductive layers, and said spring actuator is compliant at right angles (a y-direction) to said first direction, such that one of said media and said platform move freely based on said electrostatic forces in said x and y directions.

19. The apparatus according to Claim 16, wherein said actuator assembly comprises a multi-layer film of conductive patterned thin film with insulators between layers.

20. The apparatus according to Claim 1, wherein at least one of said media movement mechanism and said platform movement mechanism comprises,

an thermal drive mechanism, comprising,

a set of at least one thermal actuators,

a coupling rod attached to each of said set of at least one thermal actuator and one of said media and said platform, and

electrical paths to each of said thermal actuators;

wherein electricity supplied via said electrical paths causes a thermal expansion in said thermal actuators that moves said coupling rod.

21. The apparatus according to Claim 20, further comprising:

a sensor configured to detect an amount of movement of said thermal actuators;

wherein said sensor provides feedback to a control device regulating an amount of the electricity supplied.

22. The apparatus according to Claim 20, wherein said sensor comprises a capacitance sensor, comprising:

a fixed comb having fingers protruding in an x-axis direction,

a moving comb connected to said coupling having fingers protruding in an x-axis direction and interleaved among said fingers of said fixed comb,

bars attached to said moving comb, said bars being rigid in a y-axis direction and flexible in an x-axis direction to allow motion of said moving comb in said x-axis direction but maintaining separation of fingers of said fixed and moving combs in said y-axis direction,

an electrical path connected to said fixed comb and an electrical path connected to said moving comb, and a capacitive measurement device configured to measure a capacitance between said fixed and moving combs.

23. The apparatus according to Claim 1, wherein:

said at least one of said media movement mechanism and said platform movement mechanism comprises,

a capacitive comb array comprising,

a fixed comb and a moving comb each having a set of fingers interleaved between the other set of fingers; and

capacitive outputs configured to allow a measurement of capacitance carried by said comb array;

said apparatus further comprising,

at least one thermally active block attached to said moving comb and configured to move said moving comb by thermal expansion, and

an actuator connected to said moving comb and to one of said media and said platform.

24. The apparatus according to Claim 1, wherein:

said media is constructed from a substrate having a texture coating applied and removed, leaving surface texture on said media.

25. The apparatus according to Claim 1, wherein:

said media comprises a substrate having a surface with texture marks thereon.

26. The apparatus according to Claim 1 wherein:

said media comprises a substrate having a surface with track and sector marks thereon.

27. The apparatus according to Claim 23, further comprising an alignment device configured to move said media and said platform such that said at least one fine tip portion moves across said track and sector

marks and calibrate said media movement mechanisms based on detection of said track and sector marks by said at least one fine tip portion.

28. The apparatus according to Claim 1, wherein said at least one fine tip portion comprises an arm having a chamfered tip coated in a ferromagnetic material; and

said fine tip portion is configured to detect at least one of magnetic domains and magnetic domain voids on said media surface.

29. The apparatus according to Claim 1, further comprising:

a re-planing device configured to remove at least part of each anomaly on said media surface.

30. The apparatus according to Claim 1, further comprising

at least one positioning mechanism attached to said platform and at least one of said fine tip portions,

said positioning mechanism configured to position said fine tip portion at one of at, above, and below

said media surface while reading, and position said fine tip at one of at, above, and below said media surface while writing.

31. The apparatus according to Claim 1, wherein each fine tip portion comprises:

a cantilever attached to each fine tip portion; and

an activation/pickup device connected to each cantilever.

32. The apparatus according to Claim 31, wherein:

said activation/pickup device is at least one of electrostatically and capacitively activated causing said cantilever to vibrate near a resonance frequency of said cantilever; and

said activation/pickup mechanism is configured to detect a phase change of vibrations of said cantilever caused by said fine tip interacting with said media surface via at least one of electrical, magnetic, and physical forces.

33. The apparatus according to Claim 1, further comprising:

a cleaning device configured to remove unwanted particles from said fine tip.

34. The apparatus according to Claim 1, wherein said fine tip portion comprises:

a source configured to produce electromagnetic radiation emanations; and

a focusing device configured to direct said emanations to a predetermined location on said media surface.

35. The apparatus according to Claim 34, further comprising a receptor configured to receive a return of said emanation from said media surface.

36. The apparatus according to Claim 34, wherein:

said source comprises one of a light emitting diode and a LASER; and

said focusing device comprises a waveguide configured to direct a narrow beam from said fine tips.

37. The apparatus according to Claim 36, wherein said receptor comprises a polarizing film and a photodiode.

38. The apparatus according to Claim 1, further comprising a z-axis mechanism connected to at least one of said fine tip portions and said platform,

wherein said z-axis mechanism is configured to place said at least one of said fine tip portions at least one of on and near said media surface.

39. The apparatus according to Claim 1, wherein each fine tip portion comprises:

a cantilever having a chamfered tip; and

a z-axis drive mechanism attached to said platform and connected to said cantilever;

wherein said z-axis drive mechanism is configured to place said cantilever at least one of on and a close proximity to said media surface.

40. The apparatus according to Claim 38, wherein said z-axis drive mechanism comprises:

a cantilever (1040) connected to said fine tip portion (1050) at one end, and at least one set of comb fingers rotatably attached to said platform allowing movement of said cantilever and said fine tip portion in at least a z-axis direction;

at least one set of fixed comb fingers attached to said platform and interleaved between fingers of said rotatably attached comb fingers;

an electrostatic source attached to each of said fixed and rotatable comb fingers and configured to apply an electrostatic force between said fixed and rotatable comb fingers; and

a control device configured to control an amount of said electrostatic force applied to said fixed and rotatable comb fingers;

wherein, an electrostatic force applied by said electrostatic source between said fixed and rotatable comb fingers causes motion of said rotatable comb fingers and said cantilever and said fine tip portion to move in at least a z-axis direction.

41. The apparatus according to Claim 38, wherein said z-axis drive mechanism comprises:

a cantilever connected to said fine tip portion at one end, and at least one set of comb fingers rotatably attached to said platform allowing movement of said cantilever and said fine tip portion in at least a z-axis direction;

at least one set of fixed comb fingers attached to said platform and interleaved between fingers of said rotatably attached comb fingers; and

a capacitance detection mechanism attached to each of said fixed and rotatable comb fingers and configured to determine an amount of capacitance between said fixed and rotatable comb fingers;

wherein, said capacitance detection mechanism detects an amount of capacitance between said fixed and rotatable comb fingers to determine a z axis position of said fine tip portion.

42. The apparatus according to Claim 41, wherein said Z axis drive mechanism further comprises:

a movement device configured to move said cantilever and said fine tip portion at least one of on and in close proximity to said media surface.

43. The apparatus according to Claim 38, wherein said z-axis drive mechanism comprises:

a lever connected to said fine tip portion at one end;

a torsion bar connected at a second end of said lever;

an isolation bridge connected at one of said second end of said lever and said torsion bar;

a second torsion bar connected to said isolation bridge;

a moving surface connected to one of said isolation bridge and said second torsion bar; and

a fixed surface placed under said moving surface;

wherein:

said isolation bridge electrically isolates said lever and at least one of said second torsion bar and said moving surface, and

an electrostatic force applied to said fixed and moving surfaces causes said moving surface to twist at least one of said first and second torsion bars and cause at least one of said isolation bridge and said lever to move in a z-axis direction.

44. The apparatus according to Claim 43, wherein at least one of said surfaces comprises a grid.

45. The apparatus according to Claim 38, wherein said z-axis drive mechanism comprises:

a lever connected to said fine tip portion at one end;

a thermal bimorph, comprising a heater, and at least two materials of different expansion coefficients;

wherein a current applied to the heater raises the temperature of the bimorph, causing the bimorph to expand or contract and move said lever and said fine tip portion in a z-axis direction.

46. The apparatus according to Claim 45, wherein said heater is a poly-silicon resistor.

47. A method of operating a reading fine tip utilized in at least one of reading and writing a media surface, comprising the steps of:

emanating an electromagnetic radiation signal from said fine tip toward a media surface;

receiving a return electromagnetic radiation signal by a receptor offset from said fine tip;

determining a pattern in said return electromagnetic radiation signal caused by an object between said receptor and an origin of said return electromagnetic radiation signal;

calculating a position of said object based on said pattern; and

adjusting a height of said fine tip above said media to prevent contact of said fine tip with said object.

48. The method according to Claim 47, wherein step of determining a pattern comprises the step of:

recognizing at least one of a shadow and a penumbra cast by said object in said return signal.

49. The apparatus according to Claim 38, wherein said z-axis drive mechanism comprises:

a cantilever having said fine tip attached at a first end;

a moving assembly attached to said cantilever, comprising,

a torsion bar electrically isolated and attached to said cantilever, and

a force receiver attached to said cantilever and configured to apply force to said cantilever;

a force applicator configured to apply force to said force receiver; and

a base configured to support said torsion bars and allow movement of said torsion bars, said cantilever,

and said force receiver upon application of said force to said force receiver.

50. The apparatus according to Claim 49, wherein:

said force receiver comprises a set of cantilever fingers;

said force applicator comprises a set of fixed fingers inter-spaced between said cantilever fingers;

said cantilever and fixed finger are conductive; and

said force comprises an electrostatic potential applied between said cantilever and fixed fingers.

51. The apparatus according to Claim 50, wherein:

said torsion bar is attached to said cantilever at a fulcrum point;

said cantilever fingers comprise,

a first set of cantilever fingers attached to said cantilever at the fine tip end of said fulcrum point, and

a second set of cantilever fingers attached to said cantilever at said opposite end of said fulcrum point; and

said fixed fingers comprise,

a first set of fixed fingers inter-spaced between said first set of cantilever fingers, and

a second set of fixed fingers inter-spaced between said second set of cantilever fingers;

said first and second sets of cantilever and fixed fingers apply forces in opposite directions (downward and upward) causing motion of said cantilever about said fulcrum.

52. A method of making a media for storing data in the form of anomalies on a surface of said media, comprising the steps of:

texturing the surface of said media.

53. The method according to Claim 52, wherein said step of texturing comprises the steps of:

coating said media surface with a material; and

removing said material coating.

54.. The method according to Claim 53, wherein said step of texturing produces a lumpy pattern on said media surface.

55. The method according to Claim 52, wherein a texture produced by said step of texturing comprises a texture formed in a random pattern on said media surface at approximately 30-50 nanometers spacing.

56. The method according to Claim 53, wherein said material is a PMMA material.

57. The apparatus according to Claim 1, further comprising nubs placed between said media and said platform for providing a bearing for movement of said platform relative to said media.

58. The apparatus according to Claim 1, wherein said media comprises an amplifying media having electrodes at ends of said media, and a control area activated by said tips.

59. The apparatus according to Claim 1, wherein said media comprises a material having energy wells with increased capacitance for storing data on said media.

60. The apparatus according to Claim 59, wherein said media comprises a substrate having pits placed thereon, and layers of doped material and insulators covering said media.

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